

**MULTIMEDIA AND SCENT STORAGE CARTRIDGE DESIGN HAVING  
ELECTROSTATIC SCENT RELEASE AND METHODS FOR USING SAME**

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**COMPLETE LIST OF CLAIMS**

1. **(Withdrawn)** A scent- and multimedia-bearing card for use with a separate scent release and multimedia playback system, the scent- and multimedia-bearing card comprising:

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a scent storage medium for storing at least one scent;

an encapsulated multimedia storage medium for storing multimedia information;

and

scent release and multimedia playback control information for use by the scent release and multimedia playback system in coordinating scent release and multimedia playback from the scent- and multimedia-bearing card.

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2. **(Withdrawn)** A detachable scent- and multimedia-bearing card for use with a separate scent release and multimedia playback system, the scent- and multimedia-bearing card comprising:

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a scent storage medium for storing at least one scent; and

an encapsulated or detachable multimedia storage medium for storing multimedia information.

3. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the encapsulated multimedia storage medium comprises a Type II DVD-RAM-like cassette device, the Type II DVD-RAM-like cassette device having a housing structure encapsulating a removable DVD-RAM or DVD disc.

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4. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium stores a plurality of scents.

5. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium stores at least one fragrance.

5 6. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium stores at least one aroma.

7. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium stores at least one flavor.

8. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the  
10 scent storage medium stores at least one air-borne therapeutic agent.

9. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium stores at least one air-borne medicine.

10. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent storage medium comprises:

15 a housing;  
a scent storage reservoir contained in the housing; and  
a scent release unit connected to the scent storage reservoir for releasing scent from the scent- and multimedia-bearing card.

11. **(Withdrawn)** The detachable scent- and multimedia-bearing card of claim 2  
20 wherein the scent storage medium comprises:

a housing;  
a scent storage reservoir contained in the housing; and

a scent release unit connected to the scent storage reservoir for releasing scent from the detachable scent- and multimedia-bearing card.

12. **(Withdrawn)** The scent- and multimedia-bearing card of claim 1 wherein the scent release unit comprises:

- 5           a scent release chamber for containing scent just prior to release; and  
          a tube connecting the scent reservoir to the scent chamber.

13. **(Withdrawn)** The detachable scent- and multimedia-bearing card of claim 11 wherein the scent release unit comprise:

- a scent release chamber for containing scent just prior to release; and  
10          a tube connecting the scent reservoir to the scent chamber.

14. **(Withdrawn)** The scent- and multimedia-bearing card of claim 12 wherein the scent release chamber comprises a three-dimensional region enclosed on all sides except having a scent release opening facing upwards for releasing scent from the scent release chamber, and wherein the scent release unit further comprise:

- 15          a cover for covering the scent release opening, wherein the cover is moveable between at least two positions, a first position wherein the scent release opening is substantially sealed thereby preventing scent from escaping from the scent release chamber, and a second position, wherein the cover is displaced from the opening in the scent release chamber, wherein the displacement of the cover permits scent to escape  
20   from the scent release chamber during scent release operations.

15. **(Currently Amended)** ~~The~~ A detachable scent- and multimedia-bearing card of claim 13 for use with a separate scent release and multimedia playback system, the detachable scent- and multimedia-bearing card comprising:

a housing;

at least one scent release unit contained in the housing, wherein the scent release unit further comprise a cover for covering the scent release opening, wherein the cover is moveable between at least two positions, a first position wherein the scent release opening is substantially sealed thereby preventing scent from escaping from the scent release chamber, and a second position, wherein the cover is displaced from the opening in the scent release chamber, wherein the displacement of the cover permits scent to escape from the scent release chamber during scent release operations;

at least one scent reservoir connected to the scent release chamber for containing scent just prior to release; and

at least one scent release chamber connected to at least one scent release unit for releasing scent from the detachable scent- and multimedia-bearing card, wherein the scent release chamber comprise a three-dimensional region enclosed on all sides except having a scent release opening facing upwards for releasing scent from the scent release chamber;~~and.~~

16. **(Withdrawn)** The scent- and multimedia-bearing card of claim 14 wherein the cover is made from electromagnetic material and wherein the scent release unit further comprise:

an electromagnet for moving the cover from the first position to the second position; and

electromagnet control means for controlling the operation of the electromagnet.

17. **(Original)** The detachable scent- and multimedia-bearing card of claim 15 wherein the cover is made from electromagnetic material and wherein the scent release unit further comprises:

an electromagnetic mechanism means for moving the cover from the first position  
5 to the second position; and

electromagnetic control means for controlling the operation of the  
electromagnetic mechanism means.

18. **(Withdrawn)** The scent- and multimedia-bearing card of claim 16 wherein the electromagnetic control means further comprises:

10 wiring for receiving control signals from the scent release and multimedia playback system, the control signals controlling the operation of the electromagnet.

19. **(Original)** The detachable scent- and multimedia-bearing card of claim 17 wherein the electromagnetic control means further comprises:

wiring for receiving control signals from the scent release and multimedia  
15 playback system, the control signals controlling the operation of the electromagnetic mechanism means.

20. **(Withdrawn)** The scent- and multimedia-bearing card of claim 16 further comprising:

a spring connecting the cover to the scent release unit, wherein the spring  
20 maintains the cover in the first, closed position until the electromagnet is energized, when the cover moves to the open, second position, and wherein the spring returns the cover to the closed position after the electromagnet is de-energized.

21. **(Original)** The detachable scent- and multimedia-bearing card of claim 17 further comprising:

a spring connecting the cover to the scent release unit, wherein the spring maintains the cover in the first, closed position until the electromagnetic mechanism

5 means is energized, when the cover moves to the open, second position, and wherein the spring returns the cover to the closed position after the electromagnetic mechanism means is de-energized.

22. **(Withdrawn)** The scent- and multimedia-bearing card of claim 20 wherein the spring comprises a spiral spring.

10 23. **(Original)** The detachable scent- and multimedia-bearing card of claim 21 wherein the spring comprises a spiral spring.

24. **(Withdrawn)** The scent- and multimedia-bearing card of claim 16 wherein the scent release unit further comprise:

15 a hinge connecting the cover to the scent release unit, whereby the cover can rotate about the hinge while opening and closing; and

a leaf spring cooperating with the hinge to return the cover to a closed position when the electromagnet is not energized.

25. **(Original)** The detachable scent- and multimedia-bearing card of claim 17 wherein the scent release unit further comprises:

20 a hinge connecting the cover to the scent release unit, whereby the cover can rotate about the hinge while opening and closing; and

a leaf spring cooperating with the hinge to return the cover to a closed position when the electromagnetic mechanism means is not energized.

26. **(Withdrawn)** The scent- and multimedia-bearing card of claim 12 wherein the scent release unit further comprises an absorbent material positioned within the scent release chamber for momentarily retaining scent to be released from the scent- and multimedia-bearing card.

5 27. **(Withdrawn)** The scent- and multimedia-bearing card of claim 10 wherein the scent release unit further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

28. **(Withdrawn)** The detachable scent- and multimedia-bearing card of claim 11 wherein the scent release unit further comprise:

10 electrostatic scent release apparatus for ionizing scent in the scent release unit.

29. **(Withdrawn)** The scent- and multimedia-bearing card of claim 27 wherein the electrostatic scent release apparatus further comprise:

corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

15 30. **(Withdrawn)** The detachable scent- and multimedia-bearing card of claim 28 wherein the electrostatic scent release apparatus further comprises:

corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

31. **(Withdrawn)** The scent- and multimedia-bearing card of claim 29 wherein the  
20 electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process.

32. **(Withdrawn)** The detachable scent- and multimedia-bearing card of claim 30 wherein the electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process; and

5 wiring for connecting the grid to a ground or an external voltage source with a opposite charge to the corona discharge pin.

33. **(Withdrawn)** The scent- and multimedia-bearing card of claim 16 wherein the scent release unit further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

10 34. **(Original)** The detachable scent- and multimedia-bearing card of claim 17 wherein the scent release unit further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

35. **(Withdrawn)** The scent- and multimedia-bearing card of claim 33 wherein the electrostatic scent release apparatus further comprise:

15 corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

36. **(Original)** The detachable scent- and multimedia-bearing card of claim 34 wherein the electrostatic scent release apparatus further comprises:

corona discharge pin for creating corona discharge to ionize scent; and

20 wiring for connecting the corona discharge pin to an external voltage source.

37. **(Withdrawn)** The scent- and multimedia-bearing card of claim 35 wherein the cover and electromagnet are coated in epoxy, wherein the epoxy protects the cover and electromagnet during corona discharge.



38. **(Currently Amended)** The detachable scent- and multimedia-bearing card of claim 17 wherein the cover and electromagnetic mechanism means are coated in epoxy or high voltage insulation materials, wherein the epoxy or high voltage insulation materials protects the cover and electromagnetic mechanism means during corona discharge.

5 39. **(Withdrawn)** The scent- and multimedia-bearing card of claim 35 wherein the electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process.

40. **(Original)** The detachable scent- and multimedia-bearing card of claim 36  
10 wherein the electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process; and

wiring for connecting the grid to ground or an external voltage source with a opposite charge to the corona discharge pin.

15 41. **(Withdrawn)** A scent-bearing card for use with encapsulated optical multimedia storage devices of the type wherein an optical disc is contained in a storage housing, the scent-bearing card and encapsulated optical multimedia storage devices for use with a separate scent release and multimedia playback system to create an immersive multimedia experience comprised of olfactory and visual or sound elements, the scent-  
20 bearing card comprising:

a scent storage medium for storing at least one scent; and

scent release control information for use by the scent release and multimedia playback system in controlling scent release from the scent-bearing card.

42. **(Withdrawn)** A attachable scent-bearing card for use with a separate scent release and multimedia playback system to create an immersive multimedia experience comprised of olfactory and visual or sound elements, the attachable scent-bearing card comprising:

- 5           a scent storage medium for storing at least one scent; and  
          scent release control information for use by the scent release and multimedia playback system in controlling scent release from the attachable scent-bearing card.

43. **(Withdrawn)** The scent- and multimedia-bearing card of claim 41 wherein the encapsulated multimedia storage optical multimedia storage device comprises a Type II  
10 DVD-RAM, like cassette device, the Type II DVD-RAM-like cassette device having a housing structure encapsulating a removable DVD-RAM or DVD disc.

44. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium stores a plurality of scents.

45. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage  
15 medium stores at least one fragrance.

46. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium stores at least one aroma.

47. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium stores at least one flavor.

20 48. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium stores at least one air-borne therapeutic agent.

49. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium stores at least one air-borne medicine.

50. **(Withdrawn)** The scent-bearing card of claim 41 wherein the scent storage medium comprises:

a housing;

a scent storage reservoir contained in the housing; and

5 a scent release unit connected to the scent storage reservoir for releasing scent from the scent-bearing card.

51. **(Withdrawn)** The attachable scent-bearing card of claim 42 wherein the scent storage medium comprise:

a housing;

10 a scent storage reservoir contained in the housing; and

a scent release unit connected to the scent storage reservoir for releasing scent from the attachable scent-bearing card.

52. **(Withdrawn)** The scent-bearing card of claim 50 wherein the scent release unit comprises:

15 a scent release chamber for containing scent just prior to release; and

a tube connecting the scent reservoir to the scent release chamber.

53. **(Withdrawn)** The attachable scent-bearing card of claim 51 wherein the scent release unit comprises:

a scent release chamber for containing scent just prior to release; and

20 a tube connecting the scent reservoir to the scent release chamber.

54. **(Withdrawn)** The scent-bearing card of claim 52 wherein the scent release chamber comprises a three dimensional region enclosed on all sides except having a scent

release opening facing upwards for releasing scent from the scent release chamber, and wherein the scent release unit further comprises:

a cover for covering the scent release opening, wherein the cover is moveable between at least two positions, a first position wherein the scent release opening is substantially sealed thereby preventing scent from escaping from the scent release chamber, and a second position, wherein the cover is displaced from the opening in the scent release chamber, wherein the displacement of the cover permits scent to escape from the scent release chamber during scent release operations.

55. **(Currently Amended)** ~~The A~~ attachable scent-bearing card of claim 53 for use with a separate scent release and multimedia playback system, the attachable scent-bearing card comprising:

a housing;

at least one scent release unit contained in the housing, wherein the scent release unit further comprise a cover for covering the scent release opening, wherein the cover is moveable between at least two positions, a first position wherein the scent release opening is substantially sealed thereby preventing scent from escaping from the scent release chamber, and a second position, wherein the cover is displaced from the opening in the scent release chamber, wherein the displacement of the cover permits scent to escape from the scent release chamber during scent release operations;

at least one scent reservoir connected to the scent release chamber for containing scent just prior to release; and

at least one scent release chamber connected to at least one scent release unit for releasing scent from the attachable scent-bearing card, wherein the scent release chamber

comprise a three-dimensional region enclosed on all sides except having a scent release opening facing upwards for releasing scent from the scent release chamber, ~~and~~.

56. **(Withdrawn)** The scent-bearing card of claim 54 wherein the cover is made from electromagnetic material and wherein the scent release unit further comprise:

5 an electromagnet for moving the cover from the first position to the second position; and

electromagnet control means for controlling the operation of the electromagnet.

57. **(Original)** The attachable scent-bearing card of claim 55 wherein the cover is made from electromagnetic material and wherein the scent release unit further comprises:

10 an electromagnetic mechanism means for moving the cover from the first position to the second position; and

electromagnetic control means for controlling the operation of the electromagnetic mechanism means.

58. **(Withdrawn)** The scent-bearing card of claim 56 wherein the electromagnet  
15 control means further comprises:

wiring for receiving control signals from the scent release and multimedia playback system, the control signals controlling the operation of the electromagnet.

59. **(Original)** The attachable scent-bearing card of claim 57 wherein the electromagnetic control means further comprises:

20 wiring for receiving control signals from the scent release and multimedia playback system, the control signals controlling the operation of the electromagnetic mechanism means.

60. **(Withdrawn)** The scent-bearing card of claim 56 further comprising:

a spring connecting the cover to the scent release unit, wherein the spring maintains the cover in the first ,closed position until the electromagnet is energized, when the cover moves to the open, second position, and wherein the spring returns the cover to the closed position after the electromagnet is de-energized.

- 5    61.    **(Original)** The attachable scent-bearing card of claim 57 further comprising:

a spring connecting the cover to the scent release unit, wherein the spring maintains the cover in the first, closed position until the electromagnetic mechanism means is energized, when the cover moves to the open, second position, and wherein the spring returns the cover to the closed position after the electromagnetic mechanism  
10 means is de-energized.

62.    **(Withdrawn)** The scent-bearing card of claim 60 wherein the spring comprises a spiral spring.

63.    **(Original)** The attachable scent-bearing card of claim 61 wherein the spring comprises a spiral spring.

- 15    64.    **(Withdrawn)** The scent-bearing card of claim 56 wherein the scent release unit further comprises:

a hinge connecting the cover to the scent release unit, whereby the cover can rotate about the hinge while opening and closing; and

a leaf spring cooperating with the hinge to return the cover to a closed position  
20 when the electromagnet is not energized.

65.    **(Original)** The attachable scent-bearing card of claim 57 wherein the scent release unit further comprises:

a hinge connecting the cover to the scent release unit, whereby the cover can rotate about the hinge while opening and closing; and

a leaf spring cooperating with the hinge to return the cover to a closed position when the electromagnetic mechanism means is not energized.

5 66. **(Withdrawn)** The scent-bearing card of claim 50 wherein the scent release unit further comprises an absorbent material positioned within the scent release chamber for momentarily retaining scent to be released tom the scent-bearing card.

67. **(Withdrawn)** The scent-bearing card of claim 50 wherein the scent release unit further comprises:

10 electrostatic scent release apparatus for ionizing scent in the scent release unit.

68. **(Withdrawn)** The attachable scent-bearing card of claim 51 wherein the scent release unit further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

69. **(Withdrawn)** The scent-bearing card of claim 67 wherein the electrostatic scent  
15 release apparatus further comprises:

corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

70. **(Currently Amended)** The attachable scent-bearing card of claim 57 wherein the electrostatic scent release apparatus further comprises:

20 corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

71. **(Withdrawn)** The scent-bearing card of claim 69 wherein the electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process.

72. **(Original)** The attachable scent-bearing card of claim 70 wherein the electrostatic scent release apparatus further comprises:

5 a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process; and

wiring for connecting the grid to a ground or an external voltage source with a opposite charge to the corona discharge pin.

73. **(Withdrawn)** The scent-bearing card of claim 56 wherein the scent release unit  
10 further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

74. **(Original)** The attachable scent-bearing card of claim 57 wherein the scent release unit further comprises:

electrostatic scent release apparatus for ionizing scent in the scent release unit.

15 75. **(Withdrawn)** The scent-bearing card of claim 73 wherein the electrostatic scent release apparatus further comprises:

corona discharge pin for creating corona discharge to ionize scent; and

wiring for connecting the corona discharge pin to an external voltage source.

76. **(Currently Amended)** The attachable scent-bearing card of claim 74 wherein the  
20 electrostatic scent release apparatus further comprises:

corona discharge pin ~~pin~~ materials having sharp edge for creating corona discharge to ionize scent; and



wiring for connecting the corona discharge ~~pin~~ materials having sharp edge to an external voltage source.

77. **(Withdrawn)** The attachable scent-bearing card of claim 75 wherein the cover and electromagnet are coated in epoxy, wherein the epoxy protects the cover and  
5 electromagnet during corona discharge.

78. **(Original)** The attachable scent-bearing card of claim 76 wherein the cover and electromagnetic mechanism means are coated in epoxy or high voltage insulation materials, wherein the epoxy or high voltage insulation materials protects the cover and electromagnetic mechanism means during corona discharge.

10 79. **(Withdrawn)** The scent-bearing card of claim 75 wherein the electrostatic scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process.

80. **(Original)** The attachable scent-bearing card of claim 76 wherein the electrostatic  
15 scent release apparatus further comprises:

a grid opposite from the corona discharge pin for attracting ionized scent molecules to assist in the scent release process; and

wiring for connecting the grid to ground or an external voltage source with a opposite charge to the corona discharge pin.

20 81. **(Currently Amended)** The grid opposite from the corona discharge ~~pin~~ materials having sharp edge of claim 76 wherein the opposite charged grid further neutralize the ionized scent molecules to assist in the scent release process.

82. **(Withdrawn)** The scent-bearing card of claim 30 wherein the electrostatic scent release apparatus further comprises:

a shield surround the corona discharge pin for focusing ionized scent molecules to assist in the scent release process; and

5 wiring for connecting the shield to a ground or an external voltage source with a same charge as the corona discharge pin.

83. **(Withdrawn)** The corona discharge pin for creating corona discharge to ionize scent of claim 30 wherein the discharge pin is constructed with needle or capillary tube.

84. **(Withdrawn)** The corona discharge needle or capillary tube of claim 83 wherein  
10 the discharge needle or capillary tube is made by conductive materials.

85. **(Withdrawn)** The corona discharge needle or capillary tube of claim 83 wherein the discharge needle or capillary tube is made by nonconductive materials.

86. **(Currently Amended)** The grid opposite from the corona discharge pin of claim  
40 wherein the opposite charged grid further neutralize the ionized scent molecules to  
15 assist in the scent release process.

87. **(Withdrawn)** The scent-bearing card of claim 36 wherein the electrostatic scent release apparatus further comprises:

a shield surround the corona discharge pin for focusing ionized scent molecules to assist in the scent release process; and

20 wiring for connecting the shield to a ground or an external voltage source with a same charge as the corona discharge pin.

88. **(Withdrawn)** The corona discharge pin for creating corona discharge to ionize scent of claim 36 wherein the discharge pin is constructed with needle or capillary tube.

89. **(Withdrawn)** The corona discharge needle or capillary tube of claim 88 wherein the discharge needle or capillary tube is made by conductive materials.

90. **(Withdrawn)** The corona discharge needle or capillary tube of claim 88 wherein the discharge needle or capillary tube is made by nonconductive materials.

5 91. **(Original)** The grid opposite from the corona discharge pin of claim 72 wherein the opposite charged grid further neutralize the ionized scent molecules to assist in the scent release process.

92. **(Withdrawn)** The scent-bearing card of claim 70 wherein the electrostatic scent release apparatus further comprises:

10 a shield surround the corona discharge pin for focusing ionized scent molecules to assist in the scent release process; and

wiring for connecting the shield to a ground or an external voltage source with a same charge as the corona discharge pin.

15 93. **(Withdrawn)** The corona discharge pin for creating corona discharge to ionize scent of claim 70 wherein the discharge pin is constructed with needle or capillary tube.

94. **(Withdrawn)** The corona discharge needle or capillary tube of claim 93 wherein the discharge needle or capillary tube is made by conductive materials.

95. **(Withdrawn)** The corona discharge needle or capillary tube of claim 93 wherein  
20 the discharge needle or capillary tube is made by nonconductive materials.

96. **(Original)** The grid opposite from the corona discharge pin of claim 80 wherein the opposite charged grid further neutralize the ionized scent molecules to assist in the scent release process.

97. **(Withdrawn)** The scent-bearing card of claim 76 wherein the electrostatic scent release apparatus further comprises:

a shield surround the corona discharge pin for focusing ionized scent molecules to assist in the scent release process; and

5 wiring for connecting the shield to a ground or an external voltage source with a same charge as the corona discharge pin.

98. **(Withdrawn)** The corona discharge pin for creating corona discharge to ionize scent of claim 76 wherein the discharge pin is constructed with needle or capillary tube.

99. **(Withdrawn)** The corona discharge needle or capillary tube of claim 98 wherein  
10 the discharge needle or capillary tube is made by conductive materials.

100. **(Withdrawn)** The corona discharge needle or capillary tube of claim 98 wherein the discharge needle or capillary tube is made by nonconductive materials.